

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-22. (Cancelled)

23. (New) An isolated polynucleotide that hybridizes under stringent conditions to a nucleotide sequence comprising nucleotides 2754-2894 of SEQ ID NO:1 or its complement, wherein the isolated polynucleotide is less than 500 nucleotides long, and wherein a stringent hybridization condition is incubation at 42°C in a solution comprising 50% formamide, 1% SDS, 2 X SSC, and 10% dextran sulfate and washes at 65°C in a solution comprising 2 X SSC and 0.1% SDS.

24. (New) The isolated polynucleotide of claim 23, consisting of nucleotides 2754-2894 of SEQ ID NO:1.

25. (New) An isolated polynucleotide that hybridizes under stringent conditions to a nucleic acid comprising nucleotides 2838-2876 of SEQ ID NO:1 or its complement, wherein the isolated polynucleotide is less than 500 nucleotides long, and wherein a stringent hybridization condition is incubation at 42°C in a solution comprising 50% formamide, 1% SDS, 2 X SSC, and 10% dextran sulfate and washes at 65°C in a solution comprising 2 X SSC and 0.1% SDS.

26. (New) The isolated polynucleotide of claim 25, consisting of nucleotides 2838-2876 of SEQ ID NO:1.

27. (New) An isolated polynucleotide that hybridizes under stringent conditions to a nucleic acid comprising nucleotides 2426-2548 of SEQ ID NO:1 or its complement, wherein the isolated polynucleotide is less than 500 nucleotides long, and wherein a stringent hybridization condition is incubation at 42°C in a solution comprising 50% formamide, 1% SDS, 2 X SSC, and 10% dextran sulfate and washes at 65°C in a solution comprising 2 X SSC and 0.1% SDS.

28. (New) The isolated polynucleotide of claim 27, consisting of nucleotides 2426-2548 of SEQ ID NO:1.

29. (New) An isolated polynucleotide that hybridizes under stringent conditions to a nucleic acid comprising nucleotides 1764-1953 of SEQ ID NO:1 or its complement, wherein the isolated polynucleotide is less than 500 nucleotides long, and wherein a stringent hybridization condition is incubation at 42°C in a solution comprising 50% formamide, 1% SDS, 2 X SSC, and 10% dextran sulfate and washes at 65°C in a solution comprising 2 X SSC and 0.1% SDS.

30. (New) The isolated polynucleotide of claim 29, consisting of nucleotides 1764-1953 of SEQ ID NO:1.

31. (New) An isolated polynucleotide that hybridizes under stringent conditions to a nucleotide sequence comprising nucleotides 2754-2894 of SEQ ID NO:1 or its complement, wherein the isolated polynucleotide is less than 500 nucleotides long, wherein a stringent hybridization condition is incubation at 42°C in a solution comprising 50% formamide, 1% SDS, 2 X SSC, and 10% dextran sulfate and washes at 65°C in a solution comprising 2 X SSC and 0.1% SDS, and wherein the isolated polynucleotide is used to determine methylthioadenosine phosphorylase deficiency in a biological sample.

32. (New) The isolated polynucleotide of claim 31, consisting of nucleotides 2754-2894 of SEQ ID NO:1.

33. (New) An isolated polynucleotide that hybridizes under stringent conditions to a nucleic acid comprising nucleotides 2838-2876 of SEQ ID NO:1 or its complement, wherein the isolated polynucleotide is less than 500 nucleotides long, wherein a stringent hybridization condition is incubation at 42°C in a solution comprising 50% formamide, 1% SDS, 2 X SSC, and 10% dextran sulfate and washes at 65°C in a solution comprising 2 X SSC and 0.1% SDS, and wherein the isolated polynucleotide is used to determine methylthioadenosine phosphorylase deficiency in a biological sample.

34. (New) The isolated polynucleotide of claim 33, consisting of nucleotides 2838-2876 of SEQ ID NO:1.

35. (New) An isolated polynucleotide that hybridizes under stringent conditions to a nucleic acid comprising nucleotides 2426-2548 of SEQ ID NO:1 or its complement, wherein the isolated polynucleotide is less than 500 nucleotides long, wherein a stringent hybridization condition is incubation at 42°C in a solution comprising 50% formamide, 1% SDS, 2 X SSC, and 10% dextran sulfate and washes at 65°C in a solution comprising 2 X SSC and 0.1% SDS, and wherein the isolated polynucleotide is used to determine methylthioadenosine phosphorylase deficiency in a biological sample.

36. (New) The isolated polynucleotide of claim 35, consisting of nucleotides 2426-2548 of SEQ ID NO:1.

37. (New) An isolated polynucleotide that hybridizes under stringent conditions to a nucleic acid comprising nucleotides 1764-1953 of SEQ ID NO:1 or its complement, wherein the isolated polynucleotide is less than 500 nucleotides long, wherein a stringent hybridization condition is incubation at 42°C in a solution comprising 50% formamide, 1% SDS, 2 X SSC, and 10% dextran sulfate and washes at 65°C in a solution comprising 2 X SSC and 0.1% SDS, and wherein the isolated polynucleotide is used to determine methylthioadenosine phosphorylase deficiency in a biological sample.

38. (New) The isolated polynucleotide of claim 37, consisting of nucleotides 1764-1953 of SEQ ID NO:1.